

Unravelling the species: *Graeffea erythroptera* (Olivier) versus *Marmessoidea rosea* (Fabricius).

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Abstract

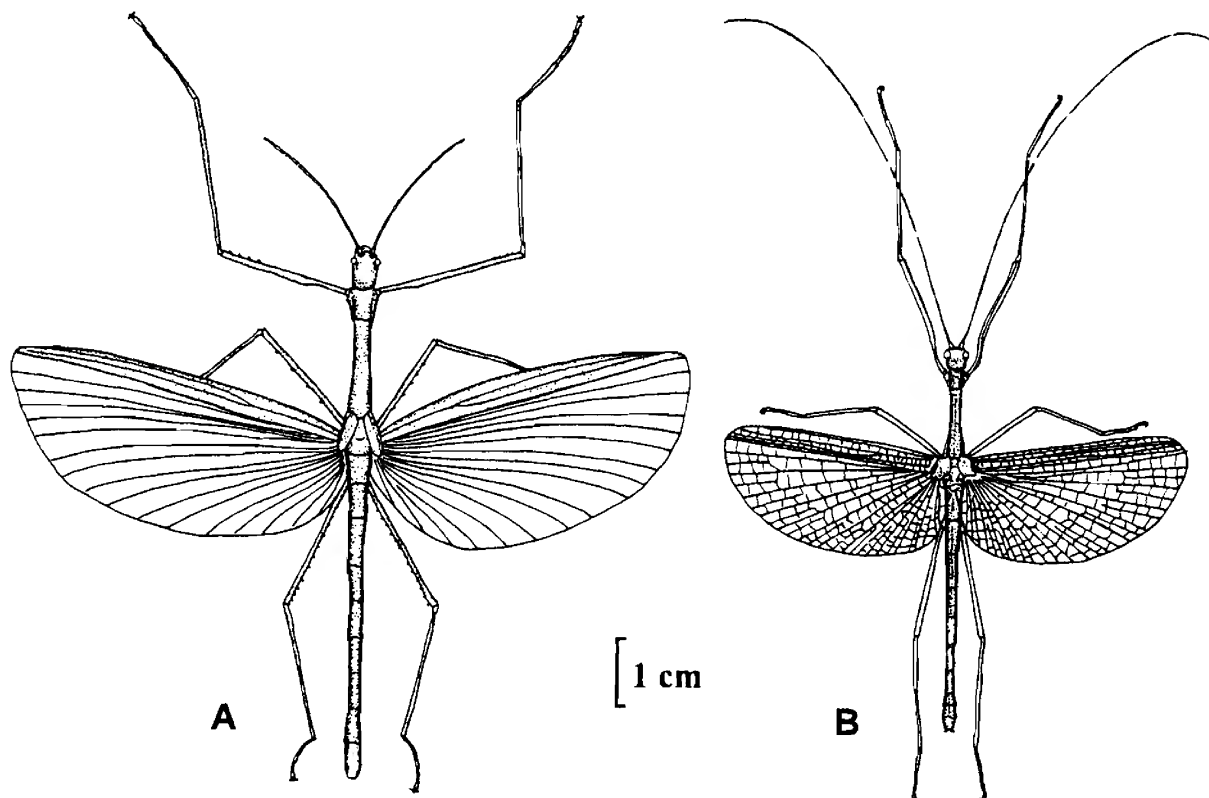
The synonymy of *Graeffea erythroptera* (Olivier) and *Marmessoidea rosea* (Fabricius) is examined. The two species are clearly distinct.

Key words

Phasmida, *Graeffea erythroptera*, *Marmessoidea rosea*, *Phasma rosea*, *Platycrania rafflesii*, *Necroscia marmessus*.

Occasionally, completely different and valid species are confused in the literature. This article highlights one of these instances, namely the two rose-winged species *Graeffea erythroptera* (Olivier) and *Marmessoidea rosea* (Fabricius) which have been mixed up by most authors publishing on them.

In 1793 Fabricius described a species under the name *Mantis rosea* (Figure 1) which since has been transferred to the genus *Marmessoidea* Brunner von Wattenwyl by Kirby (1904). According to Fabricius, the type specimens (in Copenhagen see Zimsen (1964)) clearly showed that it concerned a species from "India Orientali" [East Indies] with rose hind wings, and with antennae which are longer than the total body length. In addition, this representative of the large tribe of Necrosiinae can be easily distinguished by its greenish head and thorax and the large yellow rounded spot between the eyes.



Schematic sketches of:

A. *Graeffea erythroptera* (Olivier) male, (after Stoll, 1813 plate 5 fig. 17).

B. *Marmessoidea rosea* (Fabricius) male, (after Westwood, 1859 plate 19 fig. 7).




Preceding Fabricius' description, Olivier (1792) described a different species from Ambon under the name *Mantis erythroptera* which is based on a description of "Spectre à ailes rouges" given by Stoll (1788) (location of type material unknown); Stoll omitted to include latinized binomial names (see also Bragg, 1996). Instead of referring to illustration 17 on plate 5, Olivier incorrectly quoted figure 16 on plate 5 which represents "*Mantes raiée à etuis étroits*". This mix up may have been the reason why so few authors have referred to this common, valid species. Currently, the valid name of this species is *Graeffea erythroptera* which is classified in the subfamily Platycraninae. The species somehow resembles *Marmessoidea rosea* but easily can be distinguished from it by its short antennae, which are typical of Platycraninae, and the spine formations on the ventral side of the femora.

Detailed studies show that the name *rosea* has been incorrectly used for *erythroptera* by a number of authors. In order to unravel the literature, a diagram (Table 1) was compiled to show the citation behaviour of different authors.

Table 1 shows a representation of the citation behaviour of a number of authors who have published on these species mentioned in this article. From the upper left to the bottom right corner species names and references of publications are given in chronological order. In the rows in front of these references space is used to mark whether a particular publication is citing a previous reference. In cases where a reference is cited a mark (Q or q) is given in the column under this reference. In the diagram a distinction is made between explicit and implicit citations. Explicit citations (Q) are references that are actually cited in a particular publication, while implicit (q) or indirect citations represent those references that are not cited in a particular publication but appear in references that are explicitly cited unless it is mentioned in the reference that the particular reference, species or specimens represent a different species. At spots where different species names are combined for the first time, for example as a new synonym, a square border is given around the marking. For ease of reading, references to the two different species have been given in different grey tones.

Probably because of the fact that the knowledge on the classification of Phasmatodea was initially poorly developed, and because Stoll's excellent illustrations were apparently more useful to identify species than the existing descriptions, a number of authors (see Table 1) have incorrectly quoted Stoll's figure in combination with *M. rosea* (Fabricius) after 1793. It is probably because of this that the name *P. rosea* was included the index of the 1813 reprint of Stoll's publication. The editor of the 1813 reprint (Stoll had died in 1795) failed to quote the original references and hence Stoll's description started to live a life on its own. As a result the name *rosea* has been inconsistently used by various authors in the years following (Table 1). Gray (1835) indiscriminately combined *rosea* Fabricius with *rosea* of Stoll in favour of the latter in his description and listing of synonyms. In addition, he went on to describe *Platycrania rafflesii* from Sumatra which was synonymised with *M. rosea* (Fabricius) by Kirby (1904). Westwood (1859) under *Necroscia rosea* follows Gray's example and includes a separate description of the male of *rosea* (Stoll). Furthermore, he described *Necroscia marmessus* which was selected as the type species of *Marmessoidea* and subsequently also has been synonymised to *M. rosea* (Fabricius) by Kirby (1904). Kirby in his "Synonymic Catalogue of Orthoptera" is the first author to unravel the species. Although his intentions are clear, he indirectly cites references to *Graeffea erythroptera* (Olivier) in *Marmessoidea rosea* (Fabricius) and vice versa as shown in Table 1. Unfortunately, recent authors such as Redtenbacher and Günther continued using *rosea* of Stoll instead of *erythroptera* and as a result a lot of specimens in many collections are labelled wrongly.

Table 1. Citation behaviour of authors with respect to *G. erythroptera* (Olivier) and *M. rosea* (Fabricius).

Species: <i>Ailes Rosea</i> Stoll, 1788: 113 pl. 3 fig. 17 [not 16]															INDEX	
Q <i>Mantis erythroptera</i> Olivier, 1792: 636 (n. sp).																= <i>Graeffea erythroptera</i> (Olivier)
- <i>Mantis rosea</i> Fabricius, 1793: 16 no: 15. (n.sp).																= <i>Marmessoidea rosea</i> (Fabricius)
Q	Q	- <i>Mantis rosea</i> of Lichtenstein, 1796: 78.													Q	= cited explicit
Q	Q	- <i>Phasma rosea</i> of Fabricius, 1798: 190.													q	= cited implicit
Q	Q	- <i>Phasma roseum</i> of Lichtenstein, 1802: 14.													-	= not quoted
q	Q	- <i>Phasma rosea</i> of Latreille, 1807: 87.													?	= no information available
-	-	- <i>Phasma rosea</i> of Stoll, 1813: 13 pl. 5. fig. 17.														= species first quoted as synonym
?	?	- <i>Phasma rosea</i> of Saint Fargeau & Audinet-Serville, 1825: 101.														
Q	Q	- <i>Phasma rosea</i> of Audinet-Serville, 1831: 58.														
-	-	- <i>Platycrana rafflesii</i> Gray, 1835: 37 (n. sp.).														
Q	Q	- <i>Platycrana rosea</i> of Gray, 1835: 37.														
-	-	- <i>Phasma (Necroscia) rafflesii</i> of Haan, 1842: 121.														
Q	Q	- <i>Necroscia rosea</i> of Westwood, 1859: 148.														
-	-	- <i>Necroscia rafflesii</i> of Westwood, 1859: 149.														
-	-	- <i>Necroscia marmessus</i> Westwood, 1859: 149 (n. sp.).														
-	-	Q <i>Marmessoidea marmessus</i> of Brunner von Wattenwyl, 1893: 86.														
-	-	- <i>Arrhidaeus rosea</i> of Kirby, 1896: 472.														
-	-	Q <i>Marmessoidea marmessus</i> of Rehn, 1904: 73.														
q	-	q	-	Q	Q	-	-	-	Q	-	-	-	-	-	Q	-
q	Q	q	-	q	q	q	Q	q	q	-	q	-	Q	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Q	Q	q	-	Q	Q	Q	Q	Q	Q	-	Q	-	Q	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Q	q	q	-	q	q	q	Q	q	q	-	q	-	q	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
q	-	Q	-	-	Q	-	-	-	Q	-	-	-	Q	-	Q	-
- <i>Arrhidaeus erythroptera</i> of Kirby, 1904: 384.																
- <i>Arrhidaeus roseus</i> of Brunner, 1906: 14.																
- <i>Graeffea rosea</i> of Redtenbacher, 1908: 372.																
- <i>Marmessoidea marmessus</i> of Redtenbacher, 1908: 511.																
- <i>Graeffea rosea</i> of Günther, 1929: 624.																
- <i>Graeffea rosea</i> of Günther, 1933: 155.																
- <i>Graeffea rosea</i> of Günther, 1936: 338.																
- <i>Marmessoidea rosea</i> of Brock, 1995: 90.																

With respect to the above, the key references of the two species should be cited as follows:

Graeffea erythroptera (Olivier), 1792: 636 (*Mantis*).

Arrhidaeus erythroptera (Olivier) Kirby, 1904: 384.

Phasma rosea; Stoll, 1813: 13 pl. 5, fig. 17. [not Fabricius]

Marmessoidea rosea (Fabricius), 1793: 16 no: 15 (*Mantis*).

Phasma rosea (Fabricius), 1798: 190.

Marmessoidea rosea (Fabricius) Kirby, 1904: 371.

Platycrana rafflesii Gray, 1835: 37.

Phasma (*Necroscia*) *rafflesii* de Haan, 1842: 121.

Necroscia marmessus Westwood, 1859: 149.

Marmessoidea marmessus of Rehn, 1904: 73.

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